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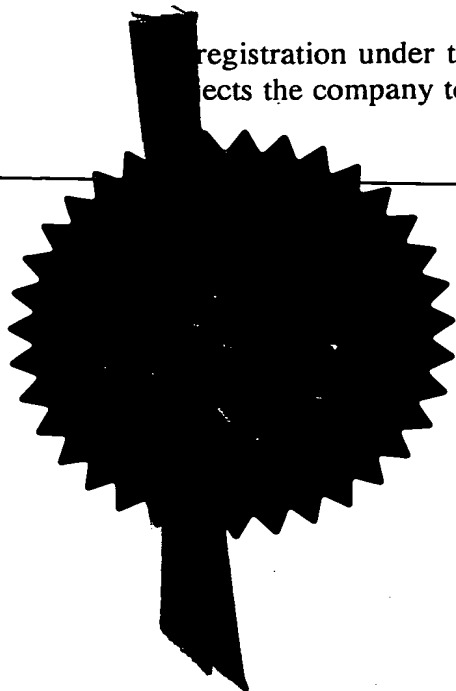
PCT

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Dated 16 August 2000



THE PATENT OFFICE

26 AUG 1999

26 AUG 1999 E47222.7 D 0346
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Request for grant of a patent*(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)*

The Patent Office

Cardiff Road
Newport
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1. Your reference	JCD-G28793			
2. Patent application number <i>(The Patent Office will fill in this part)</i>	9920133.7			
3. Full name, address and postcode of the or of each applicant <i>(underline all surnames)</i>	26 AUG 1999 Mediclean Corporation Ltd The Moorings Waterside Business Park Leeds LS10 1DG England			
Patents ADP number <i>(if you know it)</i>	7016108001			
If the applicant is a corporate body, give the country/state of its incorporation				
4. Title of the invention	Method for Eradicating Mites and De-naturing Indoor Allergies			
5. Name of your agent <i>(if you have one)</i>	Bailey Walsh & Co.			
"Address for service" in the United Kingdom to which all correspondence should be sent <i>(including the postcode)</i>	5, York Place Leeds LS1 2SD			
Patents ADP number <i>(if you know it)</i>	224001			
If you are declaring priority from one or more earlier patent applications, give the and the date of filing of the or of each of these earlier applications and <i>(if you know it)</i> the or each application number	<table border="0"> <tr> <td style="width: 33%;">Country</td> <td style="width: 33%;">Priority application number <i>(if you know it)</i></td> <td style="width: 33%;">Date of filing <i>(day / month / years)</i></td> </tr> </table>	Country	Priority application number <i>(if you know it)</i>	Date of filing <i>(day / month / years)</i>
Country	Priority application number <i>(if you know it)</i>	Date of filing <i>(day / month / years)</i>		
7. If this application is divided or otherwise derived from an earlier UK application, the earlier application	<table border="0"> <tr> <td style="width: 60%;">Number of earlier application</td> <td style="width: 40%;">Date of filing <i>(day / month / years)</i></td> </tr> </table>	Number of earlier application	Date of filing <i>(day / month / years)</i>	
Number of earlier application	Date of filing <i>(day / month / years)</i>			
8. Is a statement of inventorship and of right to grant of a patent required in support of this request? <i>(Answer "Yes" if:</i>	Yes			
a) any applicant named in part 3 is not an inventor, or b) there is an inventor who is not named as an applicant, or c) any named applicant is a corporate body See note (d)				

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document.

Continuation sheets of this form

Description

4

Claim(s)

Abstract

Drawing(s)

10. If you are also filing any of the following, state how many of each item.

Priority Documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and search (*Patents Form 9/77*)

Request for substantive examination (*Patents Form 10/77*)

Any other documents
(Please specify)

11. I/We request the grant of a patent on the basis of this application

Signature

Date

B. M. A. E.

25. 08. 99

12. Name and daytime telephone number of person to contact in the United Kingdom

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0113 2433824

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Notes

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METHODS FOR ERADICATING MITES AND DENATURING INDOOR ALLERGENS

This invention relates to the eradication of mites and denaturing of their allergens, for the improvement of living conditions for asthma and the like sufferers, and the invention achieves this in a specific and effective way.

The invention has specific application to the eradication of the house dust mite (HDM) and its allergens which are extremely prevalent in domestic textile materials, specifically carpets and bedding, including mattresses. The invention is also applicable to the eradication of other allergens, such as animal (dog and cat) allergens, and various allergens connected with insects such as cockroaches. As the main application of the invention is however the HDM and its allergen, reference is made only to such mites hereinafter in the interests of simplicity of description.

The invention represents a breakthrough in relation to the problem that the HDM allergens are the major cause of discomfort to asthma and the like sufferers as evidenced by medical studies (See M J Bluff "Use of Liquid Nitrogen in the Control of House Dust Mite Population" Clinical Allergy, 1986 - volume 16, pages 41 to 47).

The present invention has particular application to the treatment of articles of clothing, which act as a means for transportation for mites and allergens, and bedding which also constitute breeding grounds for the HDM. The treatment to which the invention relates is one whereby the HDM (*Dermatophagoides Pteronyssinus*) may be killed, and allergen contained in its droppings may be de-natured.

The HDM, as its name suggests, inhabits indoor environments, in particular those inhabited by humans or animals. Amounts of microscopic flakes of skin are shed continually by humans or animals, and these flakes not only fall to the floor and onto furnishings in a household, but also accumulate in articles of clothing; the skin flakes will gradually seat within the article. The HDM feeds from these skin flakes as they decompose, and it will be appreciated that where dead skin collects, concentrations of HDM are found. Textiles are particularly susceptible to infestation by HDM since skin particles collect in the spaces between the fibres of the textile, in which spaces the HDMs are able to live and reproduce generally without excess hindrance.

Research has shown that the effects of living in environments free of HDMS, such as hospitals, where few places are found for the HDM to live and breed, is often beneficial to humans with a propensity to develop respiratory problems such as asthma and other diseases such as rinitis and eczema. It is believed that the group of allergens called Der.p1 and Der.p2 (herein "HDM allergen"), associated with the faecal pellets of the mites, is a contributing factor if not a major cause of these diseases. It is believed that the HDM allergen causes an allergic reaction which brings about inflammation of tissue at the surface of the bronchioles in the lungs of an asthmatic person where the allergen comes to rest, where the inflammation causes breathing difficulties.

Methods are known for the treatment of domestic textiles for the eradication of the HDM, and the de-naturing of the allergen, but sufferers of asthma and parents are so fastidious about keeping clear of HDM and the allergen, that they go to great lengths to eradicate the HDM and to de-nature the allergen.

The invention extends the capability to eliminate the HDM and the allergen, and provides that when clothes are sent to a dry cleaner or laundry for cleaning, they are also subjected to a treatment, which is either the dry cleaning or laundering treatment with suitable modification to kill the HDM and/or de-nature the allergen, or are subjected to a separate process for this purpose, so that the clothes are not only dry cleaned or laundered, but are also "mite treated" or similar. Dry cleaning and/or laundering will hereinafter be referred to as "processing treatment".

Preferably, the processing treatment is modified to provide the mite treatment, in that the clothes are subjected to additional steaming in terms of time and/or temperature to provide the effect of the killing all of the HDM and/or the de-naturing of all the allergens, which does not at present happen in conventional dry cleaning treatments. By the word "all" is to be understood that the processing treatment results in the killing of a substantially greater number of the HDM, or the de-naturing of a substantially greater proportion of the allergen than would currently be achieved with conventional dry cleaning or laundering, and is not intended to limit the invention to 100% killing or denaturing of HDM or allergens.

~~Alternatively, or in addition, the processing treatment may be~~ modified by the addition of a chemical having the characteristic of being able to kill the HDM and/or de-nature the allergen. Tannic acid is one such chemical, and Benzyl Benzoate is another. Any suitable quantity of either or both of such chemicals may be added.

The clothes may be subjected to a pre-treatment and/or a post treatment for the purposes of the invention.

A dry cleaners or laundry is an ideal location for the treatment to be carried out, as the processing units will have the necessary equipment to perform the method readily, and if not they will still be suitable locations for providing any necessary additional equipment as may be required, but in any event, they will be ideally situated to advertise that they can also provide a "mite eradication treatment" which will encourage customers who are allergy sufferers, or who have allergy sufferers within the family.

The invention provides a method which enhances a trading method, and make use of existing establishments to provide a considerable benefit to asthma and the like sufferers.